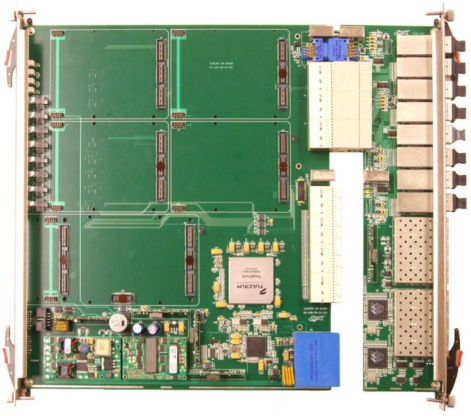
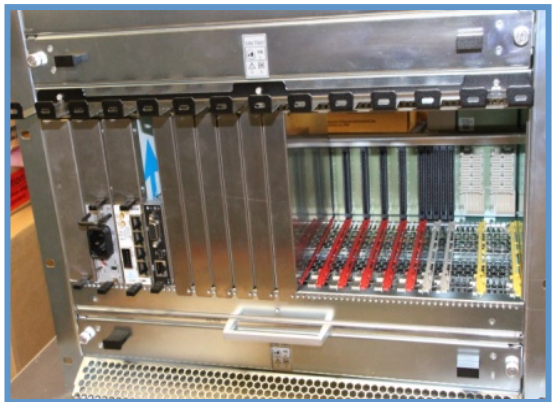
6th Workshop on ATCA and MicroTCA for Physics

Venue: Hotel Shattuck Plaza, Berkeley California
Dates: June 9-10, 2011



ATCA PICMG3.8 New RTM Standard



MicroTCA MTCA.4 New IO RTM Crate & Modules

Program Announcement and Registration

Dear Colleagues:

We are pleased to invite you to the 6th ATCA /MicroTCA for Physics Workshop in Berkeley California on Saturday and Sunday, June 2-10, just prior to the 2012 IEEE Real Time Conference and exhibition. The Workshop is under the auspices of IEEE and the Laboratory Members of the PICMG[1] xTCA[2] for Physics open standards consortium.

Purpose:

To bring together experts from labs and industry who are developing new systems based on the emerging standards as well as introducing new engineers and physicists to the power of xTCA for Physics. The ongoing roadmaps of standards committees will also be described in order to draw out comments and suggestions for important new hardware, firmware and software tools for Physics. The key motivation of PICMG is that with lab-industry collaboration the development costs and "time to market" for new applications can both be significantly reduced to the benefit of all participants.

Background

The original interest in the new telecom xTCA standards stemmed from studies for large high energy accelerator controls and detector systems that required design for high availability. However the next-generation platform with a multi gigabit serial backplane for inter-module communication quickly proved attractive for a wide range of applications. In late2008 at the 2nd xTCA for Physics Workshop in Dresden an ad hoc committee from several major physics labs accepted an invitation to join the PICMG open standards consortium to develop xTCA for Physics extensions to the existing base standards. Work began in May-June 2009 and in 2011 two new IO, timing and intelligent platform management standards for ATCA and MicroTCA were released. Guidelines for precise timing distribution and uniform software

[1] PICMG is the industry open standards group, PCI Industrial Computer Manufacturers Group, consisting of 250 companies and the following international physics Laboratories developing xTCA for Physics: CERN, DESY, ELETTRA, FNAL, IHEP, IN3P2 (Saclay), IPFN (Lisbon), ITER, KEK, LBNL and SLAC.
[2] xTCA is short for ATCA (Advanced Telecom Computer Architecture) and/or MicroTCA, also called µTCA, the packaged mezzanine card standard platform.

architectures and protocols to promote greater design uniformity and interoperability of hardware and software modules are under development. In early 2011 industry announced key infrastructure components based on the new standard and several new labs began pursuing implementation programs for both accelerator controls and detector applications.

Program

Day 1: Tutorials for new and experienced users. *Day 2:* New industry and lab developments and issues.; invited talks by vendors who have introduced products based on the new standard. *Both days:* Table top industry & lab exhibits, space limited. All presentations and exhibits are invited. Program includes time for vendor talks and viewing exhibits. Some vendors will remain for the main conference and exhibits. The preliminary program is printed below.

Registration

Advance registration is required and may be performed through the "Registration" link on the RT2012 website. The flat fee for all attendees, including vendors and invited speakers, is $200 US. Due to space restrictions it is not possible to hold a Saturday reception at the Hotel, but attendees will be asked to indicate their interest in making a reservation for an offsite dinner.

Workshop Registration, per person	$200 US *(in addition to RT2012 registration fee)*
Offsite No-Host Reception/Dinner (attendees and guests welcome)	Group Rate Prix Fixe *[to be determined]*

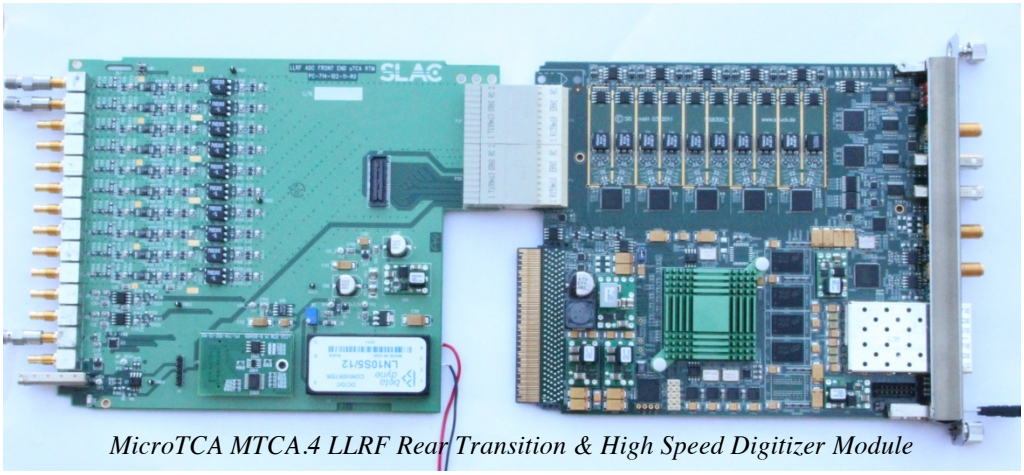
Conference Presentations Availability

All slides and related materials from the talks will be made available for downloading from the RT2012 website at the conclusion of the conference.

We look forward to seeing you in Berkeley!

Sincerely,

Ray Larsen, Chair, SLAC National Accelerator Laboratory, larsen@slac.stanford.edu
Zheqiao Geng, Program Chair, SLAC National Accelerator Laboratory, gengzq@slac.stanford.edu
Sergio Zimmermann, Arrangements Chair, Lawrence Berkeley National Laboratory, szimmermann@lbl.gov



MicroTCA MTCA.4 LLRF Rear Transition & High Speed Digitizer Module

Invited Speaker Program

Saturday Jun 9, 2012	Subject	Time (min)	Speaker(s)
REGISTRATION & WELCOME			
0800-0900	Registration	60	
0900-0915	Opening Welcome and Workshop Agenda	15	Zheqiao Geng *SLAC, ProgramChair*
SESSION 1: PICMG XTCA INTRODUCTORY TUTORIALS Chair: Bruno Goncalves, IPFN Lisbon			
0915-1000	1.1 Introductory Tutorial – ATCA/µTCA Hardware & Physics Standards Basics	45	Robert Downing *R.W. Downing Consulting & SLAC, Chair PICMG Physics Hardware HWG*
1000-1030	1.2 Introductory Tutorial – ATCA/µTCA Software Basics and Guidelines Roadmap	30	Augustus (Gus) Lowell *Triple Ring Technologies,, Secretary PICMG Software SWG*
1030-1100	Refreshment Break	30	Exhibit Area
1100-1130	1.3 Introductory Tutorial – ATCA/TCA Hardware Platform Management Systems Basics (IPMI)	30	Dariusz Makowski *Lodz & DESY, Member PICMG SWG*
1130-1200	1.4 Hardware Part 1: Industry Implementation for ATCA Intelligent RTM (PICMG 3.8)	30	Dietmar Mann *Schroff, Member PICMG Physics HWG*
1200- 1330	Lunch Break	90	
SESSION 2: PICMG XTCA FOR PHYSICS EXTENSIONS Chair: Zhen'An Liu, IHEP Beijing			
1330-1415	2.1 Hardware Part 2: Industry Implementation for MicroTCA for Physics Platform (MTCA.4)	45	Dietmar Mann *Schroff, Member PICMG Physics HWG*
1415-1500	2.2 MTCA.4 System Design, MCH, Multi-clustering, Clocking	45	Vollrath Dirksen *N.A.T., Member PICMG Physics HWG*
1500-1530	2.3 Timing Distribution Extensions for ATCA Standard Backplane	30	Jorge Sousa *IPFN, Member PICMG Physics HWG*
1530-1600	Refreshment Break	30	Exhibit Area
1600-1630	2.4 MTCA.4 Timing Distribution for Physics Backplane, MTCA.4 Power Modules	30	Kay Rehlich *DESY, Member PICMG Physics HWG*
SESSION 3: INDUSTRY EXHIBITS 1 Chair: Sergio Zimmerman, LBNL, Berkeley			
1630-1800	3.1 Industry Exhibits	90	Exhibit Area
18:30-20:00 WORKSHOP RECEPTION/DINNER (Optional, Location TBD)			

Sunday Jun 10, 2012	Subject	Time (min)	Speaker(s)
SESSION 4: LAB-LAB AND LAB-INDUSTRY INITIATIVES 1 Chair: TBD			
0900-0910	Session Introduction	10	Zheqiao Geng *SLAC, Program Chair*
0910 -0935	4.2 xTCA for Physics Timing Generator-Receiver AMC MTCA.4	25	Attila Hidvégi *Physics Department, University of Stockholm*
0935-0955	4.3 MTCA.4 Timing System Design Progress at DESY XFEL	20	Patrick Gessler *European XFEL GMBH, Member PICMG SWG*
0955-1015	4.4 ATCA Developments for Fusion Fast Plasma Control Systems	20	Bruno Gonçalves et al *IPFN, Member PICMG Physics Standards Committees*
1015-1035	4.5 xTCA Initiatives for ITER Fusion Project	20	Axel Winter *ITER, Cadarache Fr.*
1035-1100	Refreshment Break	25	Exhibits Area
1100-1120	4.6 NAT MCH Extensions for MTCA.4 Radial Timing Distribution	20	Vollrath Dirksen *N.A.T., Member Physics HWG*
1120-1140	4.7 MTCA.4 Monterey System for 10/40 Gbps Telecom and Physics Applications	20	Tony Romero *PT-Performance Technologies Inc.*
1140-1200	4.8 MTCA.4 RTMs for Generic Fast ADC-DAC	20	Matthias Kirsch *Struck Company*
1200- 1330	Lunch Break	90	Local Restaurants
SESSION 5: LAB & LAB-INDUSTRY INTIATIVES 2 Chair: TBD			
1400-1420	5.1 xTCA for Physics Initiatives for DAQ at IHEP, Beijing	20	Zhen'An Liu *IHEP, Member & Officer PICMG for Physics Committees*
1420-1440	5.2 xTCA for Physics New Initiatives for DAQ in France	20	Jean Pierrre Cachemiche *Member HWG, Centre de Physique des Particules de Marseille,*
1440-1500	5.3 xTCA New Initiatives for DAQ at LBNL	20	John Joseph *LBNL*
1500-1520	5.4 MTCA.4 DESY ITER Initiatives	20	Kay Rehlich *DESY, Member PICMG for Physics HWG*
1520-1540	5.5 xTCA SLAC LCLS Upgrade RF, Controls & DAQ Initiatives	20	Zheqiao Geng *SLAC, Member PICMG SWG*
1540-1600	Refreshment Break	20	Exhibits Area
SESSION 6: FUTURE WORKSHOP GOALS & WRAPUP Chair: Ray Larsen			
1600-1610	Status of PICMG Physics Membership	10	Ray Larsen *Chair, PICMG Physics Coordianting Committee*

1610-1625	Summary of open tasks Hardware Working Group HWG	15	Robert Downing *R.W. Downing Consulting & SLAC, Chair PICMG Physics Hardware HWG*
1625-1640	Summary of open tasks Software Working Group SWG	15	Augustus (Gus) Lowell *Triple Ring Technologies,, Secretary PICMG Software SWG*
1640-1700	Open Discussion	20	All
ADJOURN			